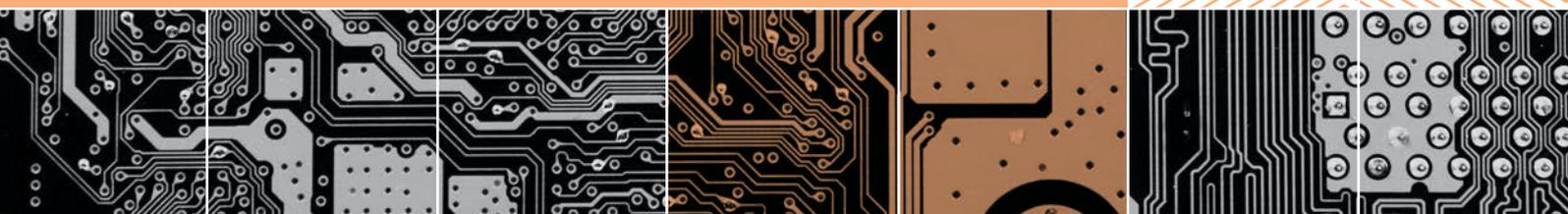**Professionals
Australia
Gender and Diversity**

UNCONSCIOUS AND SYSTEMIC BIAS IN IT

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Elizabeth McCarthy and Steven Prince

This article sets out some of the workplace-based problems related to unconscious and systemic gender bias in the information technology (IT) sector, summarises some of the issues as set out in the recent academic literature and details a range of potential systems-based solutions.

Given the challenges of unconscious bias, why do women want to work in IT?

Despite the challenges involved in dealing with the ill-effects of bias, women continue to engage in the IT industry as a professional career choice. In 2008 research into women's experience of IT work, women indicated that they found IT careers to be rewarding, said they were provided with opportunities, and disagreed with prevailing negative stereotypes about the industry (Timms et al, 2008).

What are some of the causes and effects of unconscious and sysemic bias?

Access to mentoring

The current lack of gender diversity in the industry means that there may be a limited supply of appropriate mentors for women professionals and that this, in addition to other organisational factors, works against women's advancement and retention in IT (Fisher et al, 2013).

Tokenism

Unconscious bias and a belief that roles have been awarded with reference to quotas rather than merit can be an issue (Garner, 2015). Kanter's theory of tokenism referred to the relatively few women given prominent positions in a particular occupational setting as tokens. She also argues that tokens are constantly reminded of their outsider status and that their presence serves to increase the "men's club" culture. Retention rates for women in STEM are lower when women hold a higher degree. This can be due to greater isolation, limited availability of senior roles, competition/demands and token status (Kamberidou, 2010).

Meritocracy as a barrier

A study by Castilla et al in 2010 showed that meritocracy, a key feature of tech culture, can create subtle biases against women. They suggested that if the company sees itself as meritocratic, basing raises and promotions entirely on the performance of the employee, women are more likely to get smaller bonuses than men with equivalent performance reviews. Perpetuating the belief of a level playing field through meritocracy may reduce the probability of intentionally interrupting biases fundamentally because their existence is not acknowledged.

Prove it again syndrome

The lack of examples of females in IT can lead to the well-documented "prove it again" syndrome with women having to provide more evidence of competence than men to be seen as equally capable. Within IT women can also experience getting promoted but not being award the title or salary that typically accompanies the new job, and technical expertise is dismissed as soon as they are no longer in technical roles (Williams, 2014).

Stigma associated with requesting family leave

Men who request family leave can experience cultural organisation barriers. They may be viewed as poor organisational members and unqualified for rewards. Compared with control targets, male leave requesters were perceived as higher on feminine traits (e.g. weak and uncertain) and lower on masculine traits (e.g. competitiveness and ambition). This perception uniquely predicted greater risk of penalties such as being demoted or downsized, and fully accounted for the effect of poor worker stigma on male leave requesters' penalties. The poor worker stigma and both agency and weakness perceptions also contributed to their reward recommendations (Goodman, 2014).

Culture of long hours and full-time work

The system of professional work in IT can disadvantage those desiring work/life balance including males and females with caring responsibilities with long hours, lack of flexible work arrangements and full-time rather than part-time work often considered positive indicators of professional culture. Recruitment practices may preclude women by looking at a restricted talent pool, such as full-time workers. Part-time work for programmers is in the single digits accounting for 4.4% in males and 3% in females (OUA, 2015). Sub-specialties classified as IT which enter double digits for part-time work include ICT Trainers, ICT Sales Assistants, Media Equipment Operators, Telecommunication Trade Workers (10.2% M, 0.5% F), Telemarketers (12.2% M, 32.1% F), Telephone Operators (2.3% M, 44.8% F), Technicians (Gallery, Library, Museum, 4.9% M, 56.5% F). Research confirms that less technical roles with a greater emphasis on "soft skills" are over-represented in part-time work roles.

In Australia, there is a two-level employment market where high-status well-paid jobs often involve long hours at the top, and poorly paid, precarious and often part-time jobs at the bottom (Chalmers et al, 2005). There is evidence that working in poor quality jobs may be worse on balance than the consequences of unemployment (Butterworth et al, 2011). Research in the UK has shown that low-wage jobs can cause the worker to be further disadvantaged by time poverty (Burchardt, 2008) that can reduce the opportunity to look for employment on better terms. Consequently for those in professional roles where part-time work or job-sharing is not common, the choices can be stark.

Above average income high-quality jobs can be seen as influenced by a male-centric "ideal worker", not requiring flexible work arrangements balancing house and care work (Pocock, 2003). Within Australia total hours spent in paid and unpaid work does not change substantially. Social norms often place responsibility for domestic and care work on the female (Bittman & Brown, 2007; Craig, 2007). Generous tax transfers and/or family-benefit payments exist for families in which mothers do no paid work, or have very short part-time hours (Craig, L., & Mullan, K., 2010). Australia's maternal workforce participation is comparatively low, with part-time employment the norm. These trends reduce lifetime earnings and subsequent retirement opportunities (Booth & Wood, 2006; Chalmers & Hill, 2007; Craig, L., & Mullan, K., 2010).

Workplace relationships which build or undermine confidence

In a 2013 study of women's experiences of working in IT, women reported that they felt respected (78%) despite still experiencing some discrimination (26%) (Fisher et al, 2013). The responses by female IT professionals suggest that the widely reported discomfort of women is not considered characteristic of the industry but instead arise from specific workplace relationships. The influence of relationships can have far-reaching effects, where they appear to build or undermine confidence, and also influence women's intentions to promote and encourage others to enter IT (Timms et al, 2008).

The maternity penalty

Maternity can also make a job candidate subject to unconscious bias, resulting in being 79% less likely to be hired, half as likely to be promoted, reduced salary and held to higher performance and punctuality standards (Correll, 2007). Females with child-rearing responsibilities that uphold high competency standards and dedication to their job were seen as bad mothers and therefore bad people (Benard, 2010). Unreasonable constraints may be experienced when a female returns to work after maternity leave (Houston & Marks, 2003. Key issues include the level of support from peers and supervisors, access or provision of affordable childcare, attitudes to workplace breastfeeding, family leave options, negotiability of working hours, the capacity of work offered upon return to an employer after parental leave (Coulson et al, 2012; Nowak et al, 2012).

Solutions – how can the issue of unconscious bias at a business system-based level be tackled?

While much of the focus of existing research on bias in the IT sector is on analysing and reporting on the nature of bias, some studies have begun to look at intervention approaches that would help tackle unconscious bias. Some of the approaches include the following:

Changes to organisational procedures

Experimenting with small system-based changes in organisational procedures, measure to see how successful they are, modify the model then scale is widely regarded as a positive approach. The advantage with system-based changes is that they are less likely to be lost when a new CEO decides to change diversity priorities (Williams, 2014). Identifiable metrics might include gender targets for hiring, promotion, mentoring, sponsorship and committees, with performance bonuses for meeting targets.

Salary negotiation

Job advertisements stating "salary negotiable" can encourage females to feel comfortable negotiating their contract and thus help close the pay gap in new hires (Leibbrandt et al, 2012). Training females on negotiation and encouraging a culture of self-promotion was a successful technique utilised at Google (Williams, 2014). Publishing and encouraging an open discussion of wage levels for similar jobs may be an option for reducing wage gaps.

Gender neutral job ads

The wording of job advertisements should refrain from specifying age, graduation year or demographic-specific terms such as "ninja coder". As opposed to males, female applicants can be reluctant to apply for jobs unless they meet all of the application criteria. human resources practices could include casting a wide net then refinement, encouraging known talent to apply or a culture of encouraging internal applicants to apply for vacancies.

It may be useful to consider requesting that resumes are gender neutral including techniques such as the removal of candidate names prior to screening.
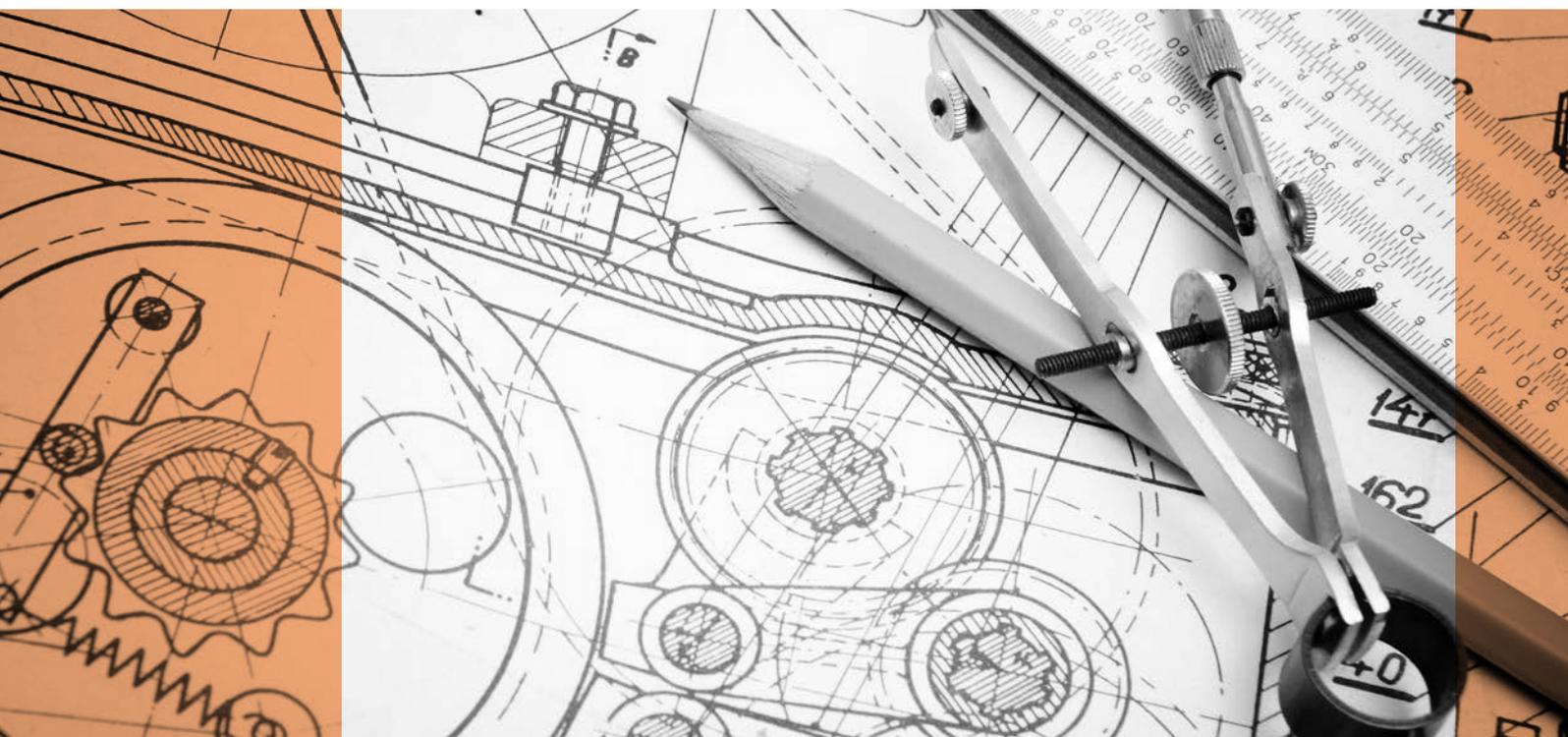
Training

Unconscious bias training for both genders including training for managers and mentors may be part of measures to address systems-based unconscious bias.

Performance evaluation

Performance evaluation should be based on key performance indicators rather than behavioural descriptors.

Quotas

In 2013, former Workplace Gender Equality Agency Director Helen Conway said that legislated quotas are an unlikely prospect due to legislation being perceived by the business community as prescriptive or intruding on their right to manage. Many organisations, particularly large ones, initiate voluntary targets to improve gender balance (Smith, F. 2013; Russell, G. & Hadley, D., 2013).

Enterprise bargaining

In enterprise bargaining, professional associations such as Professionals Australia can negotiate for family-friendly policies such as offering part-time employment to women on their return to the workforce after maternity leave.

Job-sharing

Job-sharing is an option which can benefit both individuals with child-rearing responsibilities and organisations.

Embedding diversity practices in workplaces

Diversity in the workplace and improvements in career prospects for female IT Professionals benefit not only the business but individuals (Fisher, 2013; Kamberidou, 2010). This includes accessibility and awareness of professional development opportunities available (Fisher et al, 2013; Kamberidou, 2010; Chuang, 2015) and participation in areas of planning, management assessment and organisation (Kamberidou, 2010). It also includes males being able to request family leave and flexible working hours without fear of repercussions (Rudman, 2013). Although it is important for employers to provide flexible time policies, doing so is not likely to be the sole solution, as noted by Belkin (2010) who suggested that as parenting responsibilities become more evenly distributed between partners and becomes a more gender neutral responsibility, there will be a need to transform family leave into a gender neutral policy and remove any stigma attached to it.

Family support including affordable childcare

There is demand for family support programs, flexible working hours, family-friendly working environments and affordable childcare facilities (Nowak, 2012).

Support throughout pregnancy

Greater transparency and active support during pregnancy can influence the decision to return to work (Fisher et al, 2013). Where appropriate, it may be useful for a dialogue to be entered into between employee, manager and colleagues (Houston & Marks, 2003; Millward, 2006). Communications could include negotiations around work place and times, shared parenting and childcare (Coulson et al, 2012).

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